

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A process for producing a ZrO_2 -containing translucent inorganic-inorganic dental restoration having a biaxial strength of not less than 800 MPa and a fracture toughness of more than 6.5 MPa m^{1/2}, comprising the steps of:

producing an open-pore blank of ZrO_2 powder by pressing and debinding,

pre-sintering the blank,

applying an infiltration substance, which comprises a precursor of a nonmetallic-inorganic phase, or an amorphous glass phase and a solvent, or of a hydrolysable compound of a metal, or contains an alkoxide of a metal, or a precursor of a silicate glass to said shaped part at room temperature and under vacuum,

carrying out penetration of the infiltration substance into the blank during an infiltration time of less than 10 minutes,

sintering the blank in a densifying manner under an air atmosphere and at ambient pressure, to a theoretical density of

at least 99.5%, at a temperature of from 1000°C to 1600°C to form
a translucent core and an covering layer, and

removing the covering layer by a machining operation and/or
etching, and shaping the blank to form the dental restoration by
milling and/or etching.

2. (Canceled)

3. (Canceled)

4. (Previously presented) The process as claimed in claim
1, wherein the presintering takes place at a temperature of from
600 to 1300°C.

5. (Canceled)

6. (Previously presented) The process as claimed in claim
1, wherein penetration takes place at less than 40 mbar.

7. (Previously presented) The process as claimed in claim
4, wherein penetration takes place at 10 to 30 mbar.

8. (Previously presented) The process as claimed in claim

1, wherein the infiltration substance is applied in a layer thickness of from 2 to 90% of the thickness of the presintered open-pore crystalline oxide ceramic.

9. (Previously presented) The process as claimed in claim 8, wherein the layer thickness of the infiltration substance amounts to 2 to 30% of the thickness of the dense-sintered inorganic-inorganic composite material.

10. (Previously presented) The process as claimed in claim 9, wherein the layer thickness amounts to 5 to 20%.

11. (Previously presented) The process as claimed in claim 1, wherein for the dense-sintering the infiltration substance is applied in a layer thickness of 5-90% of the thickness of the presintered blank.

12. (Previously presented) The process as claimed in claim 11, wherein the infiltration substance is applied in a layer thickness of from 10 to 90%.

13. (Previously presented) The process as claimed in claim 1, wherein the infiltration substance is applied in the presence

of a solvent.

14. (Previously presented) The process as claimed in claim 13, wherein a polar or nonpolar solvent is used.

15. (Previously presented) The process as claimed in claim 13, wherein the solvent used is water or alcohol.

16. (Previously presented) The process as claimed in claim 1, wherein further external shaping of the blank by material-removing machining takes place prior to the infiltration.

17. (Previously presented) The process as claimed in claim 1, wherein the shaping of the blank takes place after the infiltration or after the full sintering, which takes place at ambient pressure.

18. (Previously presented) The process as claimed in claim 1, wherein an adhesive agent is applied to at least sections of the surface of the blank, and/or a further material is attached.

19. (Previously presented) The process as claimed in claim 1, wherein an at least one-layer coating is applied at least to

sections of the surface of the blank and is subjected to a further heat treatment after it has been applied.

20. (Previously presented) The process as claimed in claim 1, wherein following the presintering of the blank with an oversize of 10 to 50%, a material-removing machining operation is carried out for imparting shape.

21. (Previously presented) The process as claimed in claim 19, wherein the material-removing machining is carried out with an oversize of from 15 to 30%.

Claims 22-39. (Canceled)

40. (Previously presented) The process as claimed in claim 1, wherein the zirconium oxide contains additions of yttrium oxide.

41. (Previously presented) The process as claimed in claim 1, wherein the ZrO_2 powder contains binder as pressing auxiliary.

42. (Previously presented) The process as claimed in claim 1, wherein a material -removing machining operation is carried out after the full sintering to produce the dental restoration.

43. (Previously presented) The process as claimed in claim 1, wherein the infiltration substance is tetraethyl orthosilicate with a catalyst of aluminum nitrate nonahydrate and cerium nitrate hexahydrate.